MILITARY SPECIFICATION

FILTER ELEMENTS, FLUID PRESSURE, COALESCER, OILY WASTEWATER, EXPENDABLE: AND PREFILTER ELEMENTS, OILY WASTEWATER, EXPENDABLE.

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers expendable coalescer and prefilter elements for use in oil-water separator vessels for handling oily wastewater.

1.2 Classification. Elements shall be of the following types as specified (see 6.2):

Filter - coalescer elements
- Type I - 6-inch outside diameter by 22-inch in length (see Figure 1).
- Type II - 6-inch outside diameter by 14-inches in length (see Figure 1).
- Type III - 6-inch outside diameter by 11-inches in length (see Figure 1).

Prefilters
- Type I - Outside-to-inside flow (see Figure 2).
- Type II - Inside-to-outside flow (see Figure 2).

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal form a part of this specification to the extent specified herein:

SPECIFICATIONS

Federal

L-P-378	- Plastic Sheet and Strip, Thin Gauge, Polyolefin.
QQ-S-781	- Strapping, Steel, and Seals.

PPP-B-601	- Boxes, Wood, Cleated-Plywood.
PPP-B-636	- Boxes, Shipping, Fiberboard.
PPP-B-640	- Boxes, Fiberboard, Corrugated, Triple-Wall.
PPP-T-60	- Tape: Packaging, Waterproof.

Military

MIL-P-116	- Preservation-Packaging, Methods of.
MIL-T-704	- Treatment and Painting of Materiel.
MIL-P-23236	- Paint Coating Systems, Steel Ship Tank, Fuel and Salt Water Ballast.
MIL-S-52846	- Separators, Oil-Water, Coalescer Type: Filter Elements, Fluid Pressure, Coalscer, Oily Wastewater, Expendable: and Prefilter Elements, Oily Wastewater, Expendable.

STANDARDS

Military

MIL-STD-105	- Sampling Procedures and Tables for Inspection by Attributes.
MIL-STD-129	- Marking for Shipment and Storage.
MIL-STD-130	- Identification Marking of US Military Property.
MIL-STD-810	- Environmental Test Methods.

(Copies of specifications and standards required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on the date of invitation for bids or request for proposal shall apply.

UNIFORM CLASSIFICATION COMMITTEE, AGENT

Uniform Freight Classification.

(Application for copies should be addressed to the Uniform Classification Committee, ATTN: Tariff Publishing Officer, Room 1106, 222 South Riverside Plaza, Chicago, IL 60606.)

NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC., AGENT

National Motor Freight Classification.

(Application for copies should be addressed to the American Trucking Associations, Inc., ATTN: Tariff Order Section, 1616 P Street NW, Washington, DC 20036.)

3. REQUIREMENTS

3.1 Description. The filter-coalescer elements (hereinafter called "elements") shall be as shown in Figure 1, and as specified herein; and the prefilter elements (hereinafter called "prefilters") shall be as shown in Figure 2, and as specified herein. The elements and prefilters shall be constructed with no change in design and structural features, and no change in formulation of manufacturers brand of raw materials. The elements and prefilters shall incorporate sufficient radial support to withstand a differential pressure of not less than 65 pounds per square inch (psi) without structural failure or permanent deformation.

o 3.2 Qualification. The elements and prefilters furnished under this specification shall be products which are qualified for listing on the applicable Qualified Products List (see 4.3 and 6.3).

3.3 Material. Materials used in fabrication of the elements and prefilters shall be compatible with petroleum fuels and lubricants, freshwaters, and saltwaters as specified in MIL-S-52846 with no evidence of deleterious effect.

3.3.1 Rigid components. Corrosion-resistant materials shall be used in construction of the elements and prefilters. When ferrous materials are used, they shall be coated in accordance with MIL-P-23236, Type I, Class 1.

3.3.2 Dissimilar metals. Dissimilar metals, as defined by MIL-T-704, shall not be used in direct contact with each other.

3.3.3 End caps. The element and prefilter end caps shall be manufactured of corrosion-resisting metals or molded from plastic material. The compression seals on the plastic end caps shall be molded integral with the end

caps; the compression seals on metal end caps shall be permanently attached in a manner that will preclude separation from the end caps during handling. The end caps shall be mounted perpendicular within 3 degrees to the longitudinal axis of the element or prefilter.

3.3.4 Sealing plate gaskets. The upper sealing plate center gasket packed with each element or prefilter shall be of NBR rubber or equivalent.

3.4 Performance. The elements and prefilters when used in combination shall remove solids and coalesce oils into clear droplets. When installed in oil-water separator vessels the elements and prefilters shall remove coalesced oil droplets from water at the flow rate specified in the individual detailed or end item specification. The elements and prefilters shall conform to the applicable requirements and tests specified in MIL-S-52846 and herein.

3.5 Marking. Each element and prefilter shall be permanently marked with their respective National Stock Numbers, contract number, lot identification number, suppliers name or code identification, and date of manufacture in accordance with MIL-STD-130.

3.6 Transit drop. Each element and prefilter, packaged as specified in 5.1, shall withstand the shocks induced by loading and unloading during transit. Elements and prefilters shall perform as specified herein when tested as specified in 4.5.2.2.1.

3.7 Workmanship. The elements and prefilters shall be free from burrs, tears, smudges, or any other defect that will impair serviceability of the elements and prefilters.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Classification of inspections. Inspections shall be classified as follows:

(a) Qualification inspection (see 4.3).
(b) Quality conformance inspection (see 4.4).
(c) Inspection of preparation for delivery (see 4.6).

4.3 Qualification inspection. The supplier shall furnish 32 elements or 32 prefilters or both, as applicable, for examination and tests to determine conformance to this specification. Qualification inspection will be performed by the Government, using Government test facilities at a site selected by the Government (see 6.4).

4.3.1 Examination. The elements and prefilters shall be examined as specified in 4.5.1. Presence of one or more defects shall be cause for rejection.

4.3.2 Tests. The elements and prefilters shall be tested as specified in 4.5.2.1, 4.5.2.2, and 4.5.2.2.1 when applicable. Failure of any test shall be cause for rejection.

4.4 Quality conformance inspection.

4.4.1 Lot. The inspection lot of either elements or prefilters shall conform to MIL-STD-105.

4.4.2 Sampling. Sampling for examination and tests shall be in accordance with MIL-STD-105.

4.4.3 Examination. Samples selected in accordance with 4.4.2 shall be examined for the major and minor defects specified in 4.5.1. AQL shall be 2.5 percent defective for major defects and 6.5 percent defective for minor defects.

4.4.4 Tests. Samples selected in accordance with 4.4.2 shall be tested as specified in 4.5.2.1, 4.5.2.2.1 when applicable, and 4.5.2.3. AQL shall be 4.0 percent defective.

4.5 Inspection procedure.

4.5.1 Examination. The elements (both types) and prefilters (both types) shall be examined as specified herein, for the following defects:

Major

101. Dimensions not as shown on Figures 1 or 2.

102. Materials not as specified.
103. Compression seals on both ends of elements or prefilter missing or damaged.
104. Sealing plate gaskets damaged or missing.
105. End caps not alined as specified.

Minor

201. Marking not as specified.
202. Workmanship not as specified.

4.5.2 Tests.

4.5.2.1 Test conditions. The water flow rate shall be 20 gallons per minute (gpm), for the Type I elements, 10 gpm for Type II elements, and 5 gpm for the Type III elements. The water flow rate shall be 10 gpm for the Type I prefilter, and 10 gpm for the Type II prefilter. Test system arrangement and test water shall be as specified in MIL-S-52846.

4.5.2.2 Qualification. The following tests specified in MIL-S-52846 will be performed by the Government, on the elements or prefilters as applicable:

(a) Elements and prefilters, inside-to-outside flow.
(b) Prefilters, outside-to-inside flow.
(c) Differential pressure.
(d) Oil removal.
(e) Solids removal, elements only.
(f) Solids retention, elements only.
(g) Solids removal, prefilters only.
(h) Solids retention, prefilters only.
(i) Life test.
(j) Environmental.

Nonconformance to the applicable requirements of MIL-S-52846, or to this specification shall constitute failure of any of the above qualification tests.

4.5.2.2.1 Transit drop. Prior to testing as specified in 4.5.2.2 and 4.5.2.3, each element and prefilter contained in its unit package shall be drop tested as specified in MIL-STD-810, Method 516, Procedure II. Cracks in the plastic end caps, deformation of metal end caps, damage to element or prefilter media, or nonconformance to 3.6 shall constitute failure of this test.

4.5.2.3 Quality conformance. The following tests, specified in MIL-S-52846, will be performed by the Government, using Government test facilities at a site selected by the Government (see 6.4):

(a) Elements and prefilters, inside-to-outside flow.
(b) Prefilters, outside-to-inside flow.

* (c) Oil removal, first hour and third hours only.
* (d) Solids removal, elements only.
* (e) Solids removal, prefilters only.

Nonconformance to the applicable requirements of MIL-S-52846 or to this specification shall constitute failure of any of the above quality conformance tests.

* Tests (c), (d), and (e): One or all three of these tests, as applicable to elements or prefilters, shall be made at the discretion of the testing agency.

4.6 Inspection of preparation for delivery.

4.6.1 Quality conformance inspection of pack.

4.6.1.1 Unit of product. For the purpose of inspection, a completed pack prepared for shipment shall be considered a unit of product.

4.6.1.2 Sampling. Sampling for examination shall be in accordance with MIL-STD-105.

4.6.1.3 Examination. Samples selected in accordance with 4.6.1.2 shall be examined for the following defects. AQL shall be 2.5 percent defective.

106. Materials, methods, and containers, not as specified. Each incorrect material, method, or container shall be considered one defect.
107. Elements or prefilters of unlike description packed together for Level A or B.
108. Gross weight exceeds 200 pounds for Level A.
109. Strapping not zinc coated for Level A.
110. Gross weight or size exceeds the limitations of the box specification for Level B.
111. Marking missing, illegible, incorrect, or incomplete.

5. PREPARATION FOR DELIVERY

5.1 Preservation and packaging. Preservation and packaging shall be Level A or C, as specified (see 6.2).

5.1.1 Level A. Each element or prefilter shall be preserved and packaged by one of the following methods:

(a) Each element or prefilter shall be preserved in accordance with MIL-P-116, Method IA-13.
(b) Each element and prefilter with a sealing plate gasket shall be inserted in a polyethylene bag fabricated from material conforming to L-P-378, Type I, Class 1, Thickness .0040, and closed by heat sealing. The bag containing the element or prefilter shall be packaged in a close-fitting box conforming to PPP-B-636, W6c, style optional and the box waterproofed as specified for waterproofing of slotted style boxes in accordance with the appendix to the box specification. The box shall be sealed with tape conforming to PPP-T-60, Type IV.

5.1.2 Level C. Each element or prefilter with a sealing plate gasket shall be inserted in a 4 mil polyethylene bag and closed by heat sealing. the bag containing the element or prefilter shall be packaged in a close-fitting, commercial type, fiberboard box and the box sealed.

5.2 Packing. Packing shall be Level A, B, or C as specified (see 6.2).

5.2.1 Level A. The elements or prefilters of like description shall be packed together in close-fitting boxes conforming to PPP-B-601, Overseas Type, style optional. The gross weight of each box shall not exceed 200 pounds and the boxes shall be closed and strapped in accordance with the appendix to the box specification. Unless otherwise specified (see 6.2), strapping shall conform to QQ-S-781, Finish B.

5.2.2 Level B. The elements or prefilters of like description shall be packed together in close-fitting boxes conforming to PPP-B-601, Domestic Type, style optional; PPP-B-640, Class 2, style optional; or PPP-B-636, V3c. The gross weight or size of each box shall not exceed the limitations of the applicable box specification. Box closure and strapping shall be in accordance with the appendix to the applicable box specification.

5.2.3 Level C. The elements or prefilters shall be packed to assure carrier acceptance and safe delivery to destination at lowest ratings in containers complying with Uniform Freight Classification rules or National Motor Freight Classification rules.

5.3 Marking. Packages and shipping containers shall be marked in accordance with MIL-STD-129.

5.3.1 Special marking. Each box containing a bagged element or prefilter packaged as specified in 5.1 shall be marked on two opposite sides as follows:

"HANDLE ELEMENTS BY END CAPS ONLY"

6. NOTES

6.1 Intended use. The elements and prefilters are intended for use in oil water separator vessels used to remove solids and coalesce oils from oily wastewaters.

6.2 Ordering data. Procurement documents should specify the following:

(a) Title, number, and date of this specification.
(b) Type of element or prefilter required (see 1.2).
(c) Level of preservation and packaging and level of packing required (see 5.1 and 5.2).
(d) When strapping other than as specified is required (see 5.2.1 and 6.5).

6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time set for opening of bids, qualified for inclusion in the applicable Qualified Products List whether or not such products have actually been listed by that date. The attention of the suppliers is called to this requirement, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or orders for the products covered by this specification. The activity responsible for the Qualified Products List is the Commanding Officer, U. S. Army Mobility Equipment Research and Development Center, ATTN: STSFB-GF, Fort Belvoir, VA 22060, and information pertaining to qualification of products may be obtained from that activity.

6.4 Government test facilities. The contracting officer should arrange to conduct the tests at the U. S. Army Mobility Equipment Research and Development Center, Fort Belvoir, VA 22060.

6.5 Strapping. Army policy requires the use of organic coated (Finish A) strapping for Army sponsored shipments.

Custodians:

Army - ME
Navy - SH
Air Force - 84

Review activities:

Navy - AS, SA

User activities:

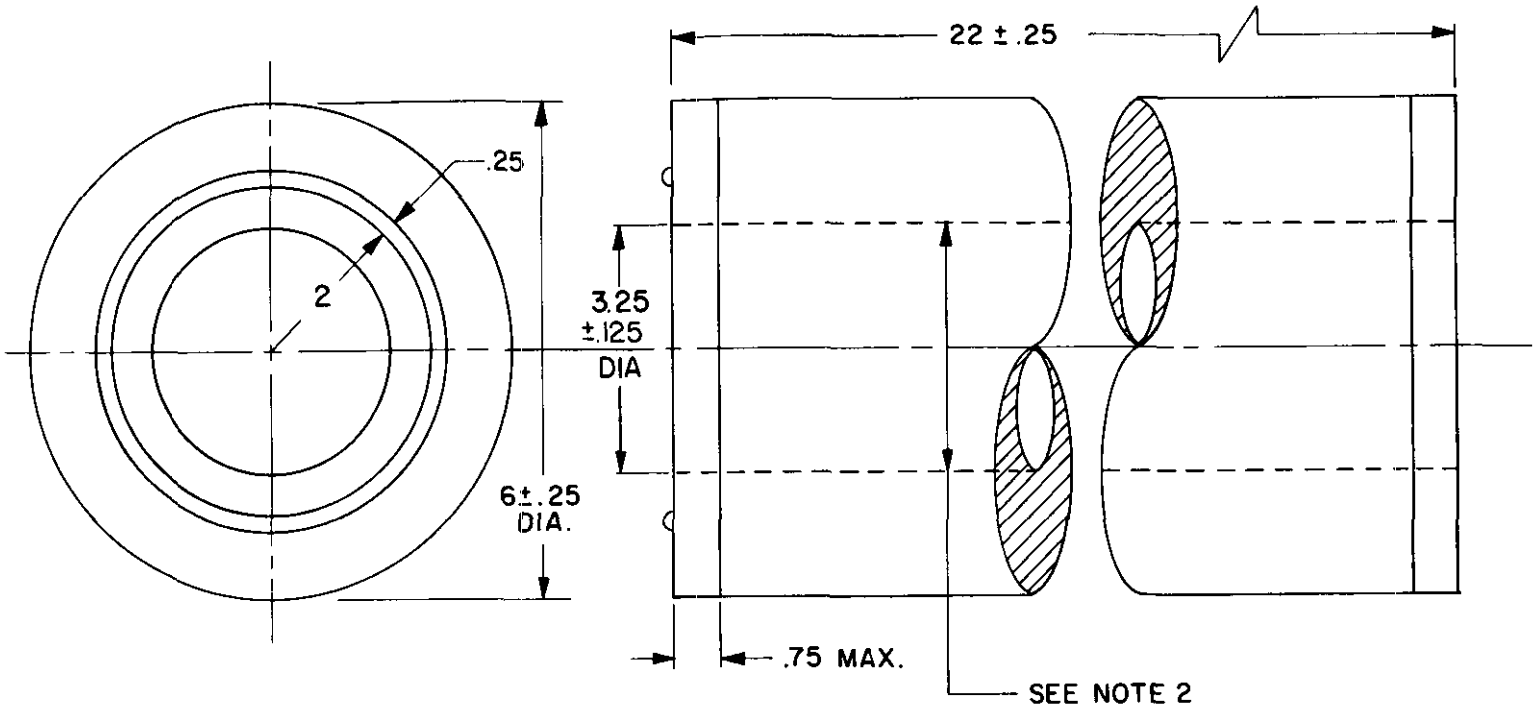
Army - TM
Navy - CG

Preparing activity:

Army - ME

Project No. 4330-0126

TYPE I



TYPE II

TYPE II SAME AS TYPE I EXCEPT LENGTH IS 14 ± .125.

TYPE III

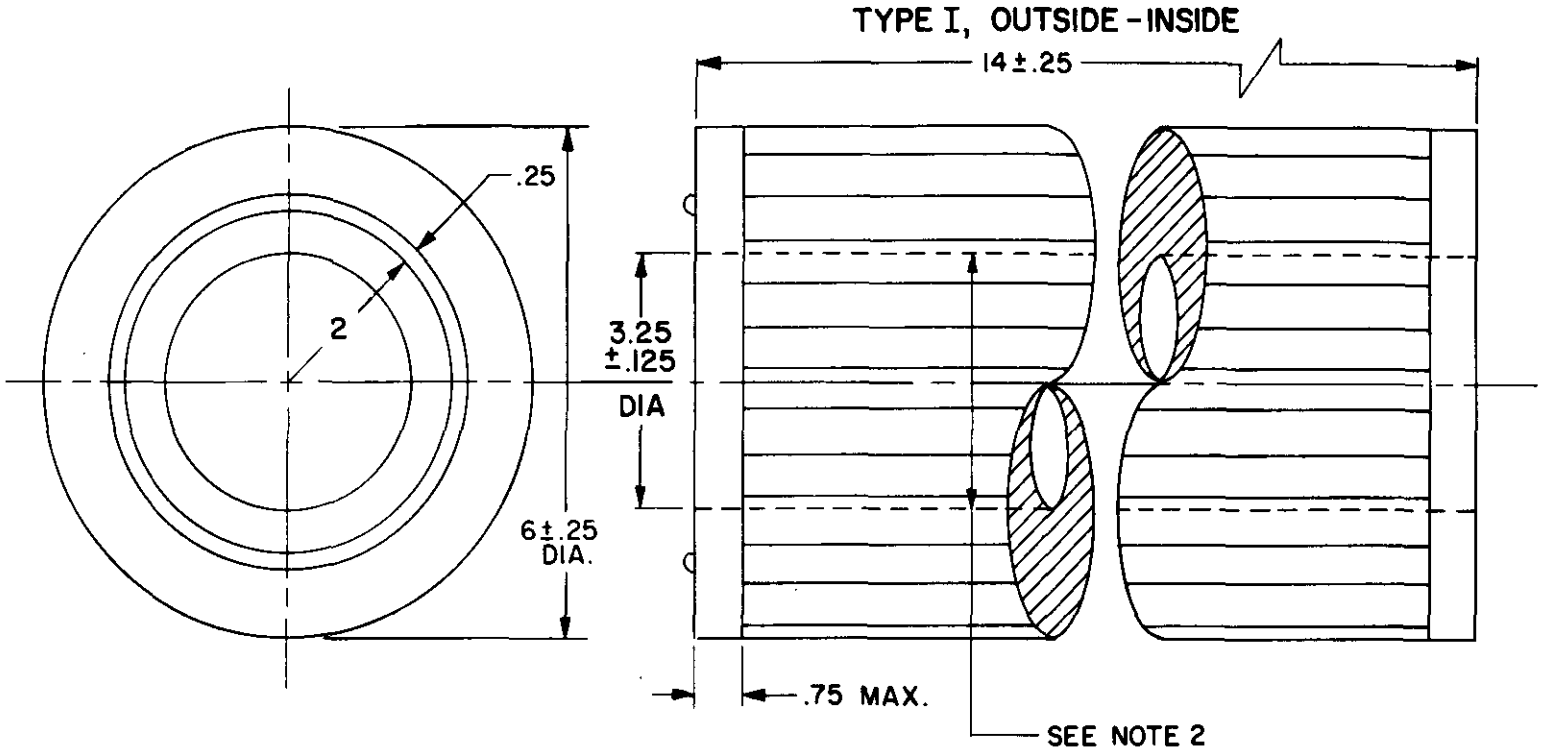
TYPE III SAME AS TYPE I EXCEPT LENGTH IS 11 ± .125.

NOTES:

1. FLOW SHALL BE INSIDE TO OUTSIDE.
2. INSIDE DIAMETER AND CONFIGURATION ARE OPTIONAL.
3. DIMENSIONS ARE IN INCHES.

FIGURE 1. COALESCERS

X-2949A



TYPE II SAME AS TYPE I EXCEPT FLOW DIRECTION

NOTES:

1. DIMENSIONS ARE IN INCHES.
2. INSIDE DIAMETER AND CONFIGURATION OPTIONAL.
3. TYPE I PREFILTERS SHALL HAVE A 10-MICRON NOMINAL RATING.
4. TYPE II PREFILTERS SHALL HAVE A 5-MICRON NOMINAL RATING.

FIGURE 2. PREFILTERS

X-2950A

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

OMB Approval
No. 22-R255

INSTRUCTIONS: The purpose of this form is to solicit beneficial comments which will help achieve procurement of suitable products at reasonable cost and minimum delay, or will otherwise enhance use of the document. DoD contractors, government activities, or manufacturers/vendors who are prospective suppliers of the product are invited to submit comments to the government. Fold on lines on reverse side, staple in corner, and send to preparing activity. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements. Attach any pertinent data which may be of use in improving this document. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity.

DOCUMENT IDENTIFIER AND TITLE MIL-F-52847 Filter Elements, Fluid Pressure, Coalescer, Oily Wastewater, Expendable; & Prefilter Elements, Oily Wastewater, Expendable.

NAME OF ORGANIZATION AND ADDRESS	CONTRACT NUMBER
	MATERIAL PROCURED UNDER A ☐ DIRECT GOVERNMENT CONTRACT ☐ SUBCONTRACT

1. HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?
   A. GIVE PARAGRAPH NUMBER AND WORDING.

   B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES

2. COMMENTS ON ANY DOCUMENT REQUIREMENT CONSIDERED TOO RIGID

3. IS THE DOCUMENT RESTRICTIVE?
   ☐ YES ☐ NO *(If "Yes", in what way?)*

4. REMARKS

SUBMITTED BY *(Printed or typed name and address - Optional)*	TELEPHONE NO.
	DATE

DD FORM 1 JAN 72 1426 REPLACES EDITION OF 1 JAN 66 WHICH MAY BE USED